REMARKS

Claims 8, 9, 13-15, 17-19 and 21-33 are pending in the instant application.

Claims 8, 9, 13-15, 17-19, 21 remain rejected and newly added claims 22-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The Examiner suggests that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the Examiner suggests that the instant application fails to teach whether SEQ ID NO:2 or a protein encoded by SEQ ID NO:1 is over-expressed in any gynecologic cancer, thus failing at the first required step leading to a method of imaging a gynecologic cancer or delivering a derivatized antibody to gynecologic tumors of cancer. The Examiner also suggests that the specification does not teach how to make "aptamers" that specifically bind to instant SEQ ID NO:2 or a protein encoded by instant SEQ ID NO:1.

Applicants respectfully traverse this rejection.

At the outset, it is respectfully pointed out that the claims were amended in the last response to state that the antibodies are polyclonal or monoclonal antibodies, thus rendering moot the Examiner's comments regarding aptamers.

Further, Applicants submitted today via Express Mail an Information Disclosure Statement inclusive of a copy of a poster by Papkoff et al. (Abstract Number A215) presented on November 18, 2003 at the AACR-NCI-EORTC 2003 International Conference on "Molecular Targets and Cancer Therapeutics discovery, biology, and clinical applications". This poster provides confirmatory data in accordance with teachings of the instant specification that antibodies against Pro104 target gynecologic cancer cells as compared to normal tissue and can be used to image gynecologic cancer cells and deliver agents to gynecologic cancer cells as claimed.

Also submitted with the Information Disclosure Statement is a recently published reference by Tang et al. Cancer Res. 2005 65(3):868-878. This reference provides additional confirmatory teachings of testisin (Pro104) being highly expressed in ovarian cancer and premeiotic spermatocytes with relatively little expression in other

normal tissues. This reference also teaches that testisin (Pro104) has been shown to be localized on the surface of cultured tumor cells. Further, data presented in this references demonstrate that testisin (Pro104) can promote cellular processes that drive malignant transformation. This reference teaches that this functional data coupled with the restricted normal tissue distribution of testisin and its overexpression in a majority of ovarian cancers validates this cell surface protein as a target.

The confirmatory data in Papkoff et al. and Tang et al. demonstrate that the target protein is over-expressed in cancer, antibodies which specifically bind Pro104 are visualized on tumor tissue without high background and that cancer tissue can be differentiated from non-cancerous tissue.

Specifically, Papkoff et al. and Tang et al. each demonstrate that Pro104 protein is over-expressed in cancers. For example, on page 870 Tang et al. states "Immunoblot of cell lysates with a monoclonal antibody against human testisin showed the HeLa cells expressed significantly more testisin protein than CaOv3 cells, consistent with the relative mRNA levels, and no testisin

protein was detected in Caco2 cells as expected (Fig 1B, top)."

This confirmatory data supports enablement of the instant specification with respect to the claimed invention.

Additionally, Papkoff et al. and Tang et al. provide confirmatory data demonstrating an antibody which specifically binds Pro104. For example, Tang et al. states on page 869, "A mouse monoclonal antibody against testisin was produced in-house using recombinant testisin protein..." Also see confirmatory data in Papkoff et al. demonstrating the use of antibodies which specifically bind Pro104 to image gynecological cancer. Specifically, images in frame 7 of Papkoff et al. show that Pro104 is detected on the cell surface of tumors and the images are free of unwanted high background.

This confirmatory data further supports enablement of the instant specification with respect to the instant claimed invention.

Applicants furthermore traverse the Examiner's suggestion that the specification fails to teach with a reasonable certainty that the protein encoded by SEQ ID NO:

1 is a gynecological cancer antigen in light of Hooper et al. The Examiner suggests that Hooper et al. indicates that the protein encoded by SEQ ID NO: 1 is a tumor suppressor. It is respectfully pointed out, however, that Hooper et al. proposes testisin (Pro104) as a tumor suppressor due to the loss of expression in testicular tumors. Hooper et al. provides no teachings whatsoever with respect to expression of testisin (Pro104) in any other tumors. The data presented in the instant application, as confirmed by Papkoff et al. and Tang et al., demonstrate that the Pro104 protein is over-expressed in gynecological cancers. Further, Tang et al. states on page 875-876, "Interestingly, whereas testisin is overexpressed in ovarian cancer, expression is lost in testicular germ cell tumors and consequently testisin was initially postulated to serve a tumor suppressor function in the testis (Hooper et al.). Whereas the function of testisin could be different depending on cell and tissue context it is possible that loss of expression in testicular tumors is rather indicative of the tumor cell differentiation state such that they no longer express testisin whose expression is normally restricted to

premeiotic germ cells during human spermatogenesis. Alternatively, the testisin gene localizes to a region of chromosome 16 (16p13.3) that exhibits loss of heterozygosity in testicular cancers and is associated with significant genetic instability due to many repetitive elements, which could indicate that testisin expression is lost by virtue of colocalization with a tumor suppressor gene." Thus, teachings of Hooper et al. are irrelevant with respect to testisin expression in gynecologic cancers and to the instant claimed invention.

In contrast, references relevant to the instant invention, namely Papkoff et al. and Tang et al., clearly confirm teachings in the instant specification, for example at page 7-8 that SEQ ID NO:2 or a protein encoded by SEQ ID NO:1 is over-expressed in a gynecologic cancer. Further, these references confirm that this protein is an antibody target for a gynecologic cancer in accordance with teachings at page 14-16 of the instant specification. Thus, these references confirm that the instant specification teaches one of skill in the art how to make and use the invention as set forth in the claims and remove any reason whatsoever to reasonably doubt such teachings.

Accordingly, the instant specification meets the requirements of 35 U.S.C. 112, first paragraph.

Withdrawal of this rejection under 35 U.S.C. 112, first paragraph is therefore respectfully requested.

Conclusion

Applicants believe that the foregoing comprises a full and complete response to the Office Action of record. Accordingly, favorable reconsideration and subsequent allowance of the pending claims is earnestly solicited.

Respectfully submitted,

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